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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,516	12/12/2003	Brian Ruggiero	34090-06297	9084

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EXAMINER

CORRIGAN, JAIME W

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

98

Office Action Summary	Application No. 10/733,516	Applicant(s) RUGGIERO, BRIAN	
	Examiner Jaime W Corrigan	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
 4a) Of the above claim(s) 9-18 and 24-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 19-23 and 28 is/are rejected.
- 7) ☐ Claim(s) 6 is/are objected to.
- 8) ☒ Claim(s) 1-28 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>5-4-05</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This application contains claims directed to the following patentably distinct species of the claimed invention:

The Species of Figures 1, 3, 5; the Species of Figure 2; the Species of Figure 4.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 23 appears generic. Method claim 23 will be examined along with any elected species since it is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the

case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Gregory Murphy on 4-25-05 a provisional election was made with traverse to prosecute the invention of the species of Figure 2, claims 1-8, 19-23, 28. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-18, 24-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 19, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Egan, III et al. (PN 6,112,710).

Regarding claim 1 Egan, III discloses a housing (See Figure 3 (31)) having a first (See Figure 3 (34)) slave piston bore, a second (See Figure 3 (34)) slave piston bore, and a passage (See Figure 3 (33), Column 6 Lines 47-50) adapted to provide hydraulic fluid to the first and second slave piston bores; a first slave piston (See Figure 3 (34)) slidably disposed in the first slave piston bore and a second (See Figure 3 (34)) slave piston slidably disposed in the second slave piston bore; a master piston (See

Figure 3 (32)) operatively connected to the housing passage; and a hydraulic fluid control valve (See Figure 3 (35)) operatively connected to the housing passage.

Regarding claim 19 Egan, III discloses the first (See Figure 3 (34)) slave piston is axially aligned above a first (See Figure 3) engine valve, and the second slave piston (See Figure 3 (34)) is axially aligned above a second (See Figure 3) engine valve.

Regarding claim 22 Egan, III discloses the valve actuation system is a fixed timing valve actuation system (See Abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egan, III et al. (PN 6,112,710) in view of Vorih et al. (PN 6,321,701).

Egan, III discloses the invention as recited in claim 1 above and further discloses the first (See Figure 3 (34)) and second (See Figure 3 (34)) slave pistons and (ii) first and second engine valves (See Figure 3 (Not numbered but clearly visible)); the first

Art Unit: 3748

(See Figure 3 (34)) and second (See Figure 3 (34)) slave pistons are disposed above central (See Figure 3 (34)) locations relative to the first and second engine valves.

Egan, III fails to disclose a valve bridge disposed between the first and second slave pistons and first and second engine valves; the first and second slave pistons are disposed above the valve bridge at central locations relative to the locations at which the valve bridge contacts the first and second engine valves and a variable valve actuation system.

Vorih teaches that it is conventional in the art to utilize a valve bridge (See Figure 1 (Between (130) and (140)) disposed between a slave (See Figure 1 (110)) piston and first and second (See Figure 1 (140)) engine valves; the slave piston is disposed above a central (See Figure 1 (130), (140)) location above the valve bridge at which the valve bridge contacts the first (See Figure 1 (140)) and second engine valves and a variable valve actuation system (See Figures 1-3, Abstract, Column 1 Lines 36-49, Column 5 Lines 46-50) .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the valve bridge between the actuating pistons and engine valves taught by Vorih in the Egan, III device since it would improve valve operation efficiency.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egan, III et al. (PN 6,112,710).

Egan, III in the first embodiment (Figure 3) discloses the invention as recited in claim 1 above, however, fails to disclose a valve seating device disposed in the housing passage; means for occluding a hydraulic fluid opening that provides communication between the housing passage and the slave piston bores; the valve seating device is directly above the first slave piston.

Egan, III in the second embodiment (Figure 2) of the same reference teaches that it is conventional in the art to utilize a valve seating device (See Figure 2 (231)) disposed in the housing passage; a hydraulic fluid opening (See Figure 2 (25)) adapted to provide hydraulic communication between (i) the housing passage (See Figure 2 (243)) and (ii) the first (See Figure 2 (23)) and second (See Figure 2 (21)) slave piston bores; and means (See Figure 2 (24)) for selectively occluding the hydraulic fluid opening; the valve seating device (See Figure 2 (231)) is disposed substantially directly above the first (See Figure 2 (23)) slave piston.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the valve seating device and hydraulic fluid opening taught by Egan, III in the second embodiment in the Egan, III device of the first embodiment since it would improve valve wear durability.

Claims 7, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egan, III et al. (PN 6,112,710) in view of Egan, III et al. (PN 6,112,710) as applied to claim 3 above, and further in view of Vorih et al. (PN 6,412,457).

Egan, III discloses the invention as recited in claim 3 above and further discloses at least one slave (See Figure 2 (23)) piston and a valve seating device (See Figure 2 (231)).

Egan, III fails to disclose a solid piston and the valve seating device is integrated into a piston.

Vorih teaches that it is conventional in the art to utilize at least one piston is solid throughout (See Figure 21 (200), Column 13 Lines 10-11); the valve seating device (See Figure 10 (260), (261)) is integrated into the piston.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the solid piston and the integrated valve seating device taught by Vorih in the Egan, III device since it would improve valve timing control.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Egan, III et al. (PN 6,112,710) in view of Egan, III et al. (PN 6,112,710) as applied to claim 3 above, and further in view of Vorih et al. (PN 6,321,701).

Egan, III discloses the invention as recited in claim 3 above and further discloses first and second slave pistons (See Figure 3 (34)) and first and second engine valves.

Egan, III fails to disclose a valve bridge disposed between the first and second slave pistons and first and second engine valves.

Vorih teaches that it is conventional in the art to utilize a valve bridge (See Figure 1 (Between (130) and (140)) disposed between a slave piston (See Figure 1 (110)) and first and second engine valves (See Figure 1 (140)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the valve bridge taught by Vorih in the Egan, III device since it would improve valve actuation.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Egan, III et al. (PN 6,112,710) in view of Cosma et al. (PN 5,619,965).

Egan, III discloses imparting a linear motion to the master piston (See Figure 3 (32), Column 6 Lines 45-50); imparting a linear motion to the two or more slave (See Figure 3 (34)) pistons responsive (See Column 6 Lines 45-50) to the master piston motion; actuating the two or more engine valves responsive to the motion of the two or more slave pistons (See Figure 3 (34), Column 6 Lines 45-50).

Egan, III fails to disclose seating the engine valves by hydraulic opposition of the motion of the slave pistons.

Cosma teaches that it is conventional in the art to utilize seating the two (See Figure 1 (20), (30)) or more engine valves by hydraulically opposing (See Column 5 Lines 61-67, Column 6 Lines 1-3, 22-30) the linear motion of the two or more slave pistons (See Figure 1 (114), (124)) as the engine valves approach valve seats.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the hydraulic opposition of the slave pistons to seat

the valves taught by Cosma in the Egan, III device since it would avoid excessive impact force between the valve and seat.

Allowable Subject Matter

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okada et al. (PN 5,992,376), Vanderpoel (PN 6,267,098) and Vorih et al. (PN 6,192,841) disclose similar valve actuation systems.

Any inquiry concerning this communication from the Examiner should be directed to Examiner Jaime Corrigan whose telephone number is (571) 272-4858. The Examiner can normally be reached on Monday – Friday from 8:30 a.m. – 6:00 p.m. 2nd Friday off.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 3748

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3700.


JC

Jaime Corrigan



Patent Examiner
Art Unit 3748

June 30, 2005



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